

Abstract

A process for removing trioxane from a use stream I of formaldehyde, trioxane and water, by

- a) providing a use stream I which comprises formaldehyde as the main component and trioxane and water as the secondary components,
- b) mixing the use stream I with a recycle stream VII which comprises trioxane as the main component and formaldehyde and water as the secondary components to obtain a feed stream Ia which comprises formaldehyde as the main component and trioxane and water as the secondary components,
- c) distilling the use stream Ia in a first distillation stage at a pressure of from 0.1 to 2.5 bar to obtain a stream II which comprises formaldehyde as the main component and water as the secondary component, and a stream III which comprises trioxane as the main component and water and formaldehyde as the secondary components,
- d) distilling the stream III, optionally after removing low boilers from the stream III in a low boiler removal stage, in a second distillation stage at a pressure of from 0.2 to 17.5 bar, the pressure in the second distillation stage being from 0.1 to 15 bar higher than the pressure in the first distillation stage, to obtain a stream IV which consists substantially of trioxane and a stream V which comprises trioxane as the main component and water and formaldehyde as the secondary components,
- e) optionally mixing the stream V with a stream IX which comprises water as the main component to obtain a stream Va having a higher water content than the stream V, the stream Va comprising trioxane as the main component and water and formaldehyde as the secondary components,
- f) distilling the stream V or Va in a third distillation stage at a pressure of from 1 to 10 bar to obtain a stream VI which consists substantially of water and the recycle stream VII which comprises trioxane as the main component and water and formaldehyde as the secondary components

(Figure)